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EXAMINER

MISLEH, JUSTIN P

ART UNIT

PAPER NUMBER

2612

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/232,265

Applicant(s)

KNUUTILA ET AL.

Examiner

Justin P Misleh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3 - 7, 9 - 11, 13, 15 - 43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3 - 7, 9 - 11, 13, 15 - 43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

The Examiner handling future prosecution of this Application and authoring this Office Action would like to inform the Applicant that the Examiner handling the previous prosecution of this Application and authoring the first Office Action (Paper No. 5, 12/19/02) are different and all future communication regarding this Application should be directed to the Examiner authoring this Office Action. The Examiner's contact information can be found at the end of this Office Action.

Response to Arguments

1. The Applicant argues: *There is nothing in the reference Endsley that is directed to the use of a camera in a viewfinder mode.* The Examiner disagrees on the basis that, while Endsley does not specifically label a viewfinder mode one does in-fact exist. As defined by the Applicant in the disclosure and also as asserted by Endsley's description of the prior art (see column 1, lines 37 – 49) a motion mode is used to provide a preview image on a LCD viewfinder prior to still mode capture. Hence, a motion mode is a *viewfinder mode*. The claim language as presently claimed by the Applicant simply requires a *viewfinder mode* and a *normal photographic mode* and as defined above both are clearly anticipated by Endsley's continuous capture mode and single-shot capture mode. The continuous capture mode provides preview images, which can be recorded as permanent images, on the monitor and the single-shot capture mode allows the user to capture those very same images and others not viewed by the continuous capture mode. The Examiner directs the Applicant to column 6 (lines 45 – 54), the user can hold the camera while

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viewing the computer monitor display to create a motion sequence for videoconferencing, or in order to frame a person, object, or document to be captured.

2. The remainder of the Applicant's arguments with respect to the presently amended claims have been considered but are moot in view of the new grounds of rejection.

Specification

3. The Examiner would like to inform the Applicant of the proper layout of the specification (see the next page).

Arrangement of the Specification

As provided in 37 CFR 1.77(b), **the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading.** If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

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(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

5. The drawings are objected to because of a mislabeling of reference signs. On page 12 (line 17) the Applicant labels the *system bus* with reference sign 24; however, the Examiner believes the *system bus* is reference sign 32 as shown in figure 2A. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

6. Claim 13 is objected to because of the following informalities: a typographical error. In the third from the last line of claim 13, the Applicant states *camera module to the electronic device compared*, however, no *electronic device* is introduced in claim 13. The Examiner believes the cited line in claim 13 was intended to refer back to the previously introduced *mobile station* and will be interpreted the same. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 19 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 19 and 30, the Applicant claims *transmitting digital image information transferred from the camera module to the **mobile station further from the mobile station via a mobile communication network***. The above-bolded claim language is indefinite and fails to particularly point out and distinctly claim the subject matter that the Applicant regards as the invention. For the purposes of examination, the Examiner will interpret claims 19 and 30 as follows: digital image information is transferred from the camera module to the electronic device/mobile station via a network of electronic devices/mobile stations.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. **Claims 1, 3 – 5, 7, 9 – 11, 13, 15 – 17, 20, 21 – 29, 31 – 40, and 42** are rejected under 35 U.S.C. 102(e) as being anticipated by Endsley et al.

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11. For **claim 1**, Endsley et al. disclose, as shown in figure 1 and as stated in columns 3 (lines 6 – 67), 4 (lines 36 – 40 and 60 – 64), 5 (lines 3 – 67), 6 (lines 3 – 67), and 7 (lines 28 – 43), a method for transferring image information from a camera module (analog section 22 and digital section 23) to an electronic device (host computer 12 including USB Host I/F 14 and computer monitor 16) in which an image is formed in the camera module by an image sensor (imager 20) comprising pixels which convert light to which the pixels are exposed into an analog signal which is converted into digital image information (by means of A/D 26), and the digital image information is transferred to the electronic device (via USB Device I/F 40, USB 42, and USB Host I/F 14) under the control of the electronic device (see column 4, lines 60 – 67, and column 5, lines 1 and 2, the host computer controls the camera-picture process ...), characterized in that the camera module is adapted to operate in either one of a normal photographic mode (single-shot mode) and a viewfinder mode (see Examiner's explanation of the viewfinder mode, in the above paragraph number 1; continuous capture mode), wherein when operating in viewfinder mode the camera module reduces the quantity of digital image information to be transferred from the camera module to the electronic device compared with the quantity of digital image information that is transferred when the camera operates in normal photographic mode. As clearly stated in column 6 (lines 35 – 41), there are two modes of operation including a continuous capture (viewfinder) lower resolution mode and a single-shot (normal photographic) full resolution mode.

12. For **claim 7**, Endsley et al. disclose, as shown in figure 1 and as stated in columns 3 (lines 6 – 67), 4 (lines 36 – 40 and 60 – 64), 5 (lines 3 – 67), 6 (lines 3 – 67), and 7 (lines 28 – 43), a camera module (analog section 22 and digital section 23) comprising an image sensor with pixels

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(imager 20) for conducting photoelectric conversion, and means for conversion of an analog signal generated by said pixels into digital image information (by means of A/D 26), the camera module further comprising means for transferring digital image information (via USB 42) to an electronic device (host computer 12 including USB Host I/F 14 and computer monitor 16) under control of the electronic device (see column 4, lines 60 – 67, and column 5, lines 1 and 2, the host computer controls the camera-picture process ...), characterized in that the camera module is adapted to operate in either one of a normal photographic mode (single-shot mode) and a viewfinder mode (see Examiner's explanation of the viewfinder mode, in the above paragraph number 1; continuous capture mode), and comprises means for reducing the quantity of digital image information to be transferred from the camera module to the electronic device when operating in viewfinder mode compared with the quantity of digital image information that is transferred when the camera operates in normal photographic mode. As clearly stated in column 6 (lines 35 – 41), there are two modes of operation including a continuous capture (viewfinder) lower resolution mode and a single-shot (normal photographic) full resolution mode.

13. For **claim 13**, Endsley et al. disclose, as shown in figure 1 and as stated in columns 3 (lines 6 – 67), 4 (lines 36 – 40 and 60 – 64), 5 (lines 3 – 67), 6 (lines 3 – 67), and 7 (lines 28 – 43), a mobile station (host computer 12 including USB Host I/F 14 and computer monitor 16) comprising: means for connecting (USB 42) to a camera module (analog section 22 and digital section 23), the camera module comprising an image sensor with pixels (imager 20) for conducting photoelectric conversion, and means for conversion of an analog signal generated by the image sensor into digital image information (by means of A/D 26); and means for controlling the transfer of digital image information formed by the camera module to the mobile station (see

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column 4, lines 60 – 67, and column 5, lines 1 and 2, the host computer controls the camera-picture process ...), characterized in that the mobile station further comprises means for setting the camera module to operate in either one of a normal photographic mode (single-shot mode) and a viewfinder mode (see Examiner's explanation of the viewfinder mode, in the above paragraph number 1; continuous capture mode), wherein when operating in viewfinder mode the camera module reduces the quantity of digital image information to be transferred from the camera module to the electronic device compared with the quantity of digital image information that is transferred when the camera operates in normal photographic mode. As clearly stated in column 6 (lines 35 – 41), there are two modes of operation including a continuous capture (viewfinder) lower resolution mode and a single-shot (normal photographic) full resolution mode.

14. For **claim 20**, Endsley et al. disclose, as shown in figure 1 and as stated in columns 3 (lines 6 – 67), 4 (lines 36 – 40 and 60 – 64), 5 (lines 3 – 67), 6 (lines 3 – 67), and 7 (lines 28 – 43), a camera system comprising a camera module (analog section 22 and digital section 23) and an electronic device (host computer 12 including USB Host I/F 14 and computer monitor 16), the camera module comprising an image sensor (imager 20) with pixels for conducting photoelectric conversion, and means for conversion of an analog signal generated by said pixels into digital image information (by means of A/D 26), the camera module further comprising means for transferring digital image information to the electronic device (via USB Device I/F 40, USB 42, and USB Host I/F 14) under the control of the electronic device (see column 4, lines 60 – 67, and column 5, lines 1 and 2, the host computer controls the camera-picture process ...), characterized in that the camera module is adapted to operate in either one of a normal photographic mode

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(single-shot mode) and a viewfinder mode (see Examiner's explanation of the viewfinder mode, in the above paragraph number 1; continuous capture mode), and comprises means for reducing the quantity of digital image information to be transferred from the camera module to the electronic device when operating in viewfinder mode compared with the quantity of digital image information that is transferred when the camera operates in normal photographic mode and the electronic device comprises a display (computer monitor 12) for displaying the digital image information transferred from the camera module. As clearly stated in column 6 (lines 35 – 41), there are two modes of operation including a continuous capture (viewfinder) lower resolution mode and a single-shot (normal photographic) full resolution mode.

15. As for **claims 3 and 9**, Endsley et al. disclose, as stated in column 5 (lines 55 – 66), that reduction of the quantity of digital image information to be transferred from the camera module is conducted by adjusting the conversion accuracy of the analog to digital conversion. The reduction of the quantity of digital image information (lowering of the resolution) is conducted by adjusting the conversion accuracy of the sampling of each color pixel. In the continuous capture (viewfinder) lower resolution mode, the number of bits per pixel sample is reduced from 8 bits to 4 bits, thereby reducing the color depth at each pixel and reducing the overall resolution of the image. The reduction from 8 bits to 4 bits is reducing the conversion accuracy of the analog to digital conversion.

16. As for **claims 4 and 10**, Endsley et al. disclose, as stated in column 6 (lines 35 – 41), that the reduction of the quantity of information to be transferred from the camera module is conducted by reducing the resolution of the image. Endsley et al. teach that there are two modes of operation including a continuous capture (viewfinder) lower resolution mode and a single-shot

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(normal photographic) full resolution mode; thereby the lower resolution mode is a reduction of the resolution of the image.

17. As for **claims 5 and 11**, Endsley et al. disclose, as stated in column 5 (lines 55 – 66), that the adjustment reduction of the resolution of the image is conducted by under-sampling of the digital image information. Endsley et al. teach of horizontal and vertical sub-sampling for every color.

18. As for **claim 15**, Endsley et al. disclose, as shown in figure 1, that the mobile station (host computer 12) comprises an external connection bus (USB 42) for transferring said digital image information from the camera module to the mobile station.

19. As for **claim 16**, Endsley et al. disclose, as stated in column 4 (lines 36 – 40), that said external connection bus (USB 42) comprises a serial bus (“stream” pipe) and a control serial bus (“one pipe for transporting control data to the camera”) and that the mobile station is adapted to transfer control information to the camera module via said control serial bus (“one pipe for transporting control data to the camera”) and to receive digital image information from the camera module in serial form via said serial bus (“stream pipe”).

20. As for **claim 17**, Endsley et al. disclose, as stated in column 3 (lines 61 – 65), that the said external connection bus (USB 42) is adapted for connection with the camera module (22 and 30) by means of conductors (“4 wires”).

21. As for **claims 21 and 31**, Endsley et al. disclose, as stated in columns 4 (lines 60 – 64), 5 (lines 3 – 13), and 6 (lines 62 – 68), that the camera module is set into viewfinder mode responsive to a control signal received from the electronic device. The operational modes of the camera can be adjusted from the host computer insofar as the host computer provides camera

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parameters representative of at least two operational camera modes (the continuous capture viewfinder mode and the single-shot capture normal photographic mode) to govern the camera's actions in each of the operational modes. The camera parameters are stored in registers (72) within the camera's microprocessor (38). Therefore, since the camera parameters governing the operation of the continuous capture viewfinder mode are provided by the host computer and stored in the camera's microprocessor registers, the viewfinder mode is set responsive to a control signal (comprised of camera parameters) received from the electronic device.

22. As for **claims 22 and 32**, Endsley et al. disclose, as stated in columns 4 (lines 60 – 64), 5 (lines 3 – 13), and 6 (lines 62 – 68), that the camera module is set into normal photographic mode responsive to a control signal received from the electronic device. The operational modes of the camera can be adjusted from the host computer insofar as the host computer provides camera parameters representative of at least two operational camera modes (the continuous capture viewfinder mode and the single-shot capture normal photographic mode) to govern the camera's actions in each of the operational modes. The camera parameters are stored in registers (72) within the camera's microprocessor (38). Therefore, since the camera parameters governing the operation of the single-shot capture normal photographic mode are provided by the host computer and stored in the camera's microprocessor registers, the normal photographic mode is set responsive to a control signal (comprised of camera parameters) received from the electronic device.

23. As for **claims 23 and 33**, Endsley et al. disclose, as stated in columns 3 (lines 9 – 16) and 4 (lines 6 – 10 and 36 – 40), that the transfer of digital image information from the camera module to the electronic device is started responsive to a control signal received from the

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electronic device. Endsley et al. teach that data is transferred between the electronic device (host computer) and camera module by means of USB. Each transaction (exchange of data) begins when the electronic device sends a USB packet to the camera module. In addition, Endsley et al. teach that the camera module USB interface has one pipe for transporting control data to the camera module and another pipe for transporting image data from the camera module.

24. As for **claims 24 and 34**, Endsley et al. disclose, as stated in column 4 (lines 60 – 64), that a picture is taken by the camera module responsive to a control signal received from the electronic device. Endsley et al. teach that the electronic device (host computer) controls the camera picture-taking process by instructing the camera when to take still or motion pictures.

25. As for **claims 25 and 35**, Endsley et al. disclose, as stated in column 5 (lines 55 – 66), that reduction of the quantity of digital image information to be transferred from the camera module is conducted by leaving less significant bits of the digital image information un-transferred. As stated above, Endsley et al. teach that the reduction of the quantity of digital image information to be transferred from the camera module can be conducted by adjusting the conversion accuracy of the analog to digital conversion. The reduction of the quantity of digital image information (lowering of the resolution) is conducted by adjusting the conversion accuracy of the sampling of each color pixel. In the continuous capture (viewfinder) lower resolution mode, the number of bits per pixel sample is reduced from 8 bits to 4 bits, thereby reducing the color depth at each pixel and reducing the overall resolution of the image and in fact leaving less significant bits of the digital information to be transferred un-transferred.

26. As for **claims 26 and 36**, Endsley et al. disclose, as shown in figure 1 and as stated in column 5 (lines 55 – 66), that the camera module captures an image with maximum resolution

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(images are always captured at a the imager resolution of 640 x 480) and reduces the quantity of digital image information to be transferred at the stage when the digital image information is transferred to the electronic device (digital section 30 is the stage when the digital information is transferred). Endsley et al. teach that a reduction of the quantity of digital image information takes place in the static ram memory (34).

27. As for **claim 27**, Endsley et al. disclose, as shown in figure 1, a method according to claim 1, characterized in that the image is displayed on a display (computer monitor 16) of the electronic device (host computer).

28. As for **claims 28 and 37**, Endsley et al. disclose, as stated in column 5 (lines 48 – 54), that the camera module crops a region from an image and transfers the digital image information of the cropped region to the electronic device. The operational modes of the camera can be adjusted from the host computer insofar as the host computer provides camera parameters representative of at least two operational camera modes (the continuous capture viewfinder mode and the single-shot capture normal photographic mode) to govern the camera's actions in each of the operational modes. The camera parameters are stored in registers (72) within the camera's microprocessor (38). Of the plurality of camera parameters, a crop value parameter provides starting and ending lines and pixels to crop the image before it is transferred to the electronic device. Performing a crop on the image thereby reduces the amount of data that has to be sent to the electronic device (host computer).

29. As for **claim 29**, Endsley et al. disclose, that the electronic device sends information about the region of the image to be cropped to the camera module. As stated above, the crop

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value parameter provided by the electronic device (host computer) provides starting and ending lines and pixels to crop the image before it is transferred to the electronic device.

30. As for **claim 38**, Endsley et al. disclose, as shown in figure 1, that the camera module (analog section 22 and digital section 30) is a separate module from said electronic device (host computer 12) and comprises an external connection bus (USB 42) for transferring said digital image information to the electronic device.

31. As for **claim 39**, Endsley et al. disclose, as stated in column 4 (lines 36 – 40), that said external connection bus (USB 42) comprises a serial bus (“stream” pipe) and a control serial bus (“one pipe for transporting control data to the camera”) and that the camera module is adapted to transfer digital image information to the electronic device in serial form via said serial bus (“stream pipe”) and is adapted to receive control information from the electronic device via said control serial bus (“one pipe for transporting control data to the camera”).

32. As for **claim 40**, Endsley et al. disclose, as stated in column 3 (lines 61 – 65), that the said external connection bus (USB 42) is adapted for connection with the electronic device (host computer) by means of conductors (“4 wires”).

33. As for **claim 42**, Endsley et al. disclose, as shown in figure 2, the camera module (10) adapted for use with a mobile station (by means of USB 42).

Claim Rejections - 35 USC § 103

34. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

35. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Endsley et al. in view of Miyake.

36. As for **claim 6**, Endsley et al. disclose that the reduction of the quantity of information to be transferred from the camera module is conducted by reducing the resolution of the image. However, Endsley et al. do not disclose that the resolution of the image is restored in the electronic device; the resolution is restored by interpolation from the received digital image information. Miyake disclose, as shown in figure 1 and as stated in columns 4 (lines 65 and 66), 5 (lines 55 – 61), and 11 (lines 37 – 52), a method, that can be incorporated into an electronic device, in which the resolution of a low resolution image (input at 100) is restored into a high resolution image (output at 106). As stated in column 11 (lines 31 – 36), at the time the invention was made, one with ordinary skill in the art would have been motivated to include the method of restoring the resolution of a low resolution image as taught by Miyake in the electronic device of Endsley et al. as means to provide a clear jag-less high quality output image even based on an original image of which information quantity is low. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have included the method of restoring the resolution of a low resolution image as taught by Miyake in the electronic device of Endsley et al.

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37. **Claims 18 and 41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Endsley et al. in view of Dei et al.

38. As for **claim 18**, Endsley et al. disclose, that the camera module is a separate module from said mobile station and comprises an external connection bus (USB 42) for transferring said digital image information to the mobile station, however, Endsley et al. do not disclose that the said external connection bus, is adapted for connection with the camera module by means of infrared transmission. Dei et al. also disclose, as shown in figure 2 and as stated in columns 3 (lines 9 – 12 and 35 – 44) and 4 (lines 17 – 21), a camera module connected to a mobile station by means of an external connection bus (16 and 17). However, Dei et al. disclose, that the said external connection bus, is adapted for connection with the camera module by means of infrared transmission (via infrared-ray receivers 6 and 11). At the time the invention was made, one with ordinary skill in the art would have been motivated to adapt the external connection bus, of Endsley et al., for connection to the camera module by means of infrared transmission as taught by Dei et al. as a means to provide an equally reliable external connection bus while providing increased flexibility in the location of the camera module with respect to the mobile station and vice versa. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have adapted the external connection bus, of Endsley et al., for connection to the camera module by means of infrared transmission as taught by Dei et al.

39. As for **claim 41**, Endsley et al. disclose, that the camera module is a separate module from said electronic device and comprises an external connection bus (USB 42) for transferring said digital image information to the electronic device, however, Endsley et al. do not disclose that the said external connection bus, is adapted for connection with the electronic device by

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means of infrared transmission. Dei et al. also disclose, as shown in figure 2 and as stated in columns 3 (lines 9 – 12 and 35 – 44) and 4 (lines 17 – 21), a camera module connected to an electronic device by means of an external connection bus (16 and 17). However, Dei et al. disclose, that the said external connection bus, is adapted for connection with the electronic device by means of infrared transmission (via infrared-ray receivers 6 and 11). At the time the invention was made, one with ordinary skill in the art would have been motivated to adapt the external connection bus, of Endsley et al., for connection to the electronic device by means of infrared transmission as taught by Dei et al. as a means to provide an equally reliable external connection bus while providing increased flexibility in the location of the camera module with respect to the electronic device and vice versa. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have adapted the external connection bus, of Endsley et al., for connection to the electronic device by means of infrared transmission as taught by Dei et al.

40. **Claims 19, 30, and 43** are rejected under 35 U.S.C. 103(a) as being unpatentable over Endsley et al. in view of Hsieh et al.

41. As for **claims 19 and 30** (please 112 2nd paragraph rejection above), Endsley et al. disclose a means (via USB 42) for controlling the transfer of digital image information formed by the camera module (22 and 30) to the electronic device/mobile station (12), however, Endsley et al. do not disclose transferring digital image information from the camera module to the electronic device/mobile station via a network of electronic devices/mobile stations. Hsieh et al. also disclose, as shown in figure 5 and as stated in columns 5 (lines 55 – 59), 6 (lines 27 – 47), 9 (lines 40 – 44), and 10 (lines 30 – 35), a camera module (110) connected to an electronic

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device/mobile station (120) for transferring digital image information (via USB 119). Hsieh et al. also disclose transferring digital image information from the camera module (110) to the electronic device/mobile station (120) via a network of electronic devices/mobile stations (100'). As stated in column 10 (lines 30 – 35), at the time the invention was made one with ordinary skill in the art would have been motivated to transfer digital image information from the camera module to the electronic device/mobile station via a network of electronic devices/mobile stations as taught by Hsieh et al. in the camera module/electronic device/mobile station of Endsley et al. as a means to share electronic devices/mobile stations among multiple camera modules. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to transfer digital image information from the camera module to the electronic device/mobile station via a network of electronic devices/mobile stations as taught by Hsieh et al. in the camera module/electronic device/mobile station of Endsley et al.

42. As for **claim 43**, Endsley et al. disclose a camera module (22 and 30) connected to an electronic device (12) via an external connection bus (42), however, Endsley et al. do not disclose that the said camera module is integrated in the electronic device. Hsieh et al. also disclose, as shown in figure 6 and as stated in columns 5 (lines 55 – 59), 6 (lines 27 – 47), 9 (lines 40 – 44), and 10 (lines 30 – 35), a camera module (110) connected to an electronic device/mobile station (300) for transferring digital image information (via serial link 117/330). Hsieh et al. disclose that the said camera module (110) is integrated in the electronic device (300). At the time the invention was made, one with ordinary skill in the art would have been motivated to modify the camera module and electronic device as taught by Endsley et al. into an integrated camera module and electronic device as taught by Hsieh et al. as means to provide the

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user with increased mobility to capture images he/she desires rather than those images within the vicinity of the location of the camera module and electronic device. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to modify the camera module and electronic device as taught by Endsley et al. into an integrated camera module and electronic device as taught by Hsieh et al.

Conclusion

43. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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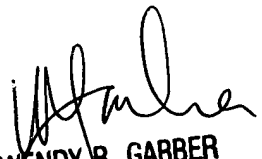
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin P Misleh whose telephone number is 703.305.8090. The examiner can normally be reached on Monday - Friday, 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R Garber can be reached on 703.305.4929. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703.306.0377.

JPM

September 5, 2003


WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600